CDEC-RT – CDEC Real-Time Data Display

Overview

- CDEC-RT allows the user to monitor selected CDEC data in real time.

- A list of CDEC sensors (station identifier and CDEC sensor number) to be monitored is maintained in a database file.   Up to 12 sensors may be displayed at once.

- In automatic mode, plots of the sensor data are maintained continuously. The data window moves forward in time and new data is automatically downloaded from CDEC at specified intervals.

- New time sensor data values may be screened automatically using a simple min/max range to eliminate questionable values.

- Polynomial coefficients may be specified to transform the data. This allows one data for one constituent to estimate values for another, such as using chloride to estimate bromide.

- An alarm threshold may be displayed to alert the user when that values that have crossed the threshold

- The application may be left running continuously (automatic mode) or used intermittently to view the data. Continuous use was assumed to be the usual mode of use.

Installation

Copy CDEC-RT.exe, CDEC-RT.exe.manifest and CDEC-RT_Data.sdf from the source to a folder on your computer. Click on CDEC-RT to run the application. Establish a shortcuts as desired in common locations, such as your desktop.

CDEC-RT_Data.sdf is an empty database file for storing data display. Multiple copies may be made for alternate configurations. See Database below for further information.

Database

The database (.sdf files) used by CDEC-RT are Microsoft SQL Server Compact Edition (SQLCE) files. They can be treated like any other file, i.e., they can be backed up, copied, etc.

Although SQLCE files can support multiple simultaneous users, in this application they should be used by only one user at a time.

Configuration

Station-Sensors

After installation, a dataset defining stations and sensors must be configured before data display can begin.

1. Start the application.

2. Specify the database location using File→Open on the application menu. You will be prompted to identify the location of the application database.

3. Specify the stations and the sensors to be monitored.
   Stations are the 3 charactger CDEC codes. CDEC sensor codes are listed for each station on the CDEC website.   For more information see "Station-Sensor Data" below.

Multiple datasets may be created by repeating the process above.

Application Settings

Application settings apply across all datasets used by the application. They are:

- Time span in days

- Background color

Usage

The application window is resizable by dragging the lower right-hand corner. Graphics in the window automatically resize to fit.

Multiple copies of the application may be run at once. Each can be connected with a different database.
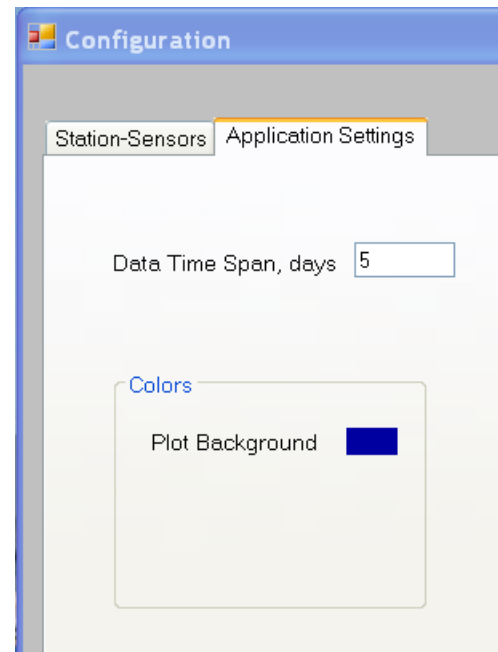
Station-Sensor Data

Item	Description	Required?
Station	Short name of station. Used for label.	x
Sensor	Constituent name. Used for label	x
CDEC Sta Code	Three-letter CDEC station code	x
CDEC Sensor #	See http://cdec.water.ca.gov/misc/senslist.html	x
Units	Used for label.	
Interval	Not used.	
Inactive	Use to deactivate a station-sensor	x
Min Alarm Level	Shown as a line on the plot.	
Max Alarm Level	Shown as a line on the plot.	
CDEC Frequency Code	Daily, hourly, event, etc	x
First Update Time	Time of first data value during day in minutes. Establishes the beginning time for scheduling data updates during the day.	x
Update Interval	The update interval in HH:MM	x
Min Plot Value	Controls display.	x
Max Plot Value	Controls display.	x
Min Allow Value	Used in screening. Must be specified if Max Allow Value is specified.	
Max Allow Value	Used in screening. Must be specified if Min Allow Value is specified	
Transform	Polynomial coefficients in descending order, separated by commas. Used only if specified.	

Time Series

The format of the time series data stored in the database is:

Field	Description
StaSensorID	tags data for each station+sensor combination.
ObsTime	Time and date, PST
RawValue	
Value	Value is plotted. May be "null" (undefined) if invalid